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U.S.-Australia-India Public-Private Partnership Uses New Crop Technologies to Help Smallholder Farmers Adapt to Climate Change

WASHINGTON, D.C.—The United States Agency for International Development (USAID) is supporting a new public-private research partnership between the Australian Centre for Plant Functional Genomics (ACPFG) and India-based Vibha Agrotech to develop new climate-resilient varieties of rice and wheat, two of the "big three" primary crops required to feed the world. The program is part of Feed the Future, the U.S. Government's global hunger and food security initiative, and it leverages resources from both the public and private sector in Australia and the private sector in India.

Climate change is altering environmental conditions and reducing agricultural productivity, with developing countries showing the greatest vulnerability. South Asia, Sub-Saharan Africa, the Middle East and North Africa are predicted to see yield losses of up to 35 percent by 2050 for major cereal crops, creating significant economic losses and uncertainty for people relying on staple production for their food security. Already, 25 million ha (over 61 million acres) of cereal production is negatively impacted by drought annually, and it is estimated that at least 20 percent of irrigated cropland globally is affected by salinity.

This new collaboration will leverage ACPFG's unique gene technologies and considerable expertise in cereal stress tolerance and Vibha's field evaluation and rice transformation capabilities to develop new rice and wheat varieties with enhanced tolerance to drought and salinity, allowing farmers more stable production in the face of sudden drought and evolving salt water intrusion. The new lines will be evaluated under representative field conditions and the most successful will be transferred into the varieties that farmers grow. Work will initially take place in Australia and India, but the technologies will be made available to developing countries in South Asia and globally where climate stresses impact cereal yields, so that farmers can be more confident that they will have a good harvest, even as climate change creates more unpredictable growing environments.

"We have to increase global food production by 60% by 2050, even as climate change is already affecting crop yields," said Dr. Julie Howard, USAID's Chief Scientist in the Bureau for Food Security and Senior Advisor to the Administrator on Agricultural Research, Extension and Education. "That means we must use all the tools available to us to grow more food on less land and with less water. USAID is excited to launch this partnership and to leverage new expertise, resources and technologies to help make important cereal crops—and, ultimately, the smallholders who grow them – more resilient to climate change."

Under the Feed the Future initiative, USAID has considerably expanded its investments in climate-resilient cereal research and development. This collaboration is the latest in a series of partnerships announced recently that leverage significant resources from the private sector and are aimed at helping smallholder farmers adapt to climate change. Along with public and private research partners in the US, Australia, Mexico, the Philippines, South Asia, Indonesia, and Sub-Saharan Africa, USAID is supporting the development of new varieties of rice, wheat, maize, sorghum and millet that are tolerant to heat, drought and salinity and can grow with less fertilizer and water.

"A key role that Australia can play in helping to support food production is through collaboration and sharing of technological advances," said Michael Gilbert, ACPFG's General Manager. "The Australian Federal and South Australian Governments established ACPFG as a technology development and delivery organization. Through this support, ACPFG is now recognized internationally as a leading organization in developing and applying the latest technologies to crop improvement."

About Feed the Future: Feed the Future is the U.S. Government's global hunger and food security initiative. With a focus on smallholder farmers, particularly women, Feed the Future supports partner countries in developing their agriculture sectors to spur economic growth and trade that increase incomes and reduce hunger, poverty and under nutrition. More information: **www.feedthefuture.gov**

About Australian Centre for Plant Functional Genomics: ACPFG was established in 2003 by the South Australian Government and the Australian Federal Government through the Australian Research Council and the Grains Research and Development Corporation. ACPFG scientists improve cereal crops' tolerance to environmental stresses such as drought, heat, salinity and nutrient toxicities; major causes of yield and quality loss throughout the world and significant problems for cereal growers. The future resilience of our food production systems in the face of a changing climate will depend upon the development and delivery of new technologies. For more information about ACPFG please visit **www.acpfg.com.au**.

About Vibha Seeds: Vibha Agrotech Limited (Vibha) is one of the premier private crop genetics and plant breeding research organizations in India. It was established in 1995 at Hyderabad, with a vision of empowering Indian farmers by providing superior quality seeds. Vibha leads the Indian market with its research and development, production and distribution of quality seeds of 230 products in 15 field and 20 vegetable crops. Vibha operate in 22 Indian states through 5500 distributors and 250 thousand dealers, supplying 20 million farmers.

*This post originally **appeared** on the USAID website. For more on Feed the Future and research, please visit our **Research** page.*